WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a semiconductor member having thereon a plurality of interconnect pads: and

a mounting member having a plurality of electrode terminals electrically and mechanically connected to the respective interconnect pads for mounting the semiconductor chip on the mounting member,

the electrode terminals forming a plurality of I/O cells each having part of the electrode terminals, the part of electrode terminals including signal terminals, the I/O cells forming a first group of the I/O cells and a second group of I/O cells disposed on an inner position of the mounting member with respect to the first group.

2. The semiconductor device as defined in claim 1, wherein the semiconductor member is a semiconductor chip, the electrode terminals are internal electrodes disposed on a bottom surface of the semiconductor chip, and the mounting member is a package substrate used for packaging thereon the semiconductor chip.

3. The semiconductor device as defined in claim 1,

wherein the mounting member is a semiconductor package mounting a semiconductor chip on a packaging substrate, the electrode terminals are ball electrodes disposed on a bottom surface of the packaging substrate, and the substrate is a mounting substrate for forming a specified circuit by mounting the semiconductor package thereon.

4. The semiconductor device as defined in claim 1, wherein the I/O cell includes only the electrode terminals for signals or the electrode terminals for signals, power and ground intermingled among one another.

5. The semiconductor device as defined in claim 4, wherein the I/O cell includes peripherals.

6. The semiconductor device as defined in claim 1, wherein an interconnect line is connected to the interconnect pad, and the interconnect lines connected to the interconnect pad of the at least one of the I/O cells are formed in a single interconnect layer.

7. The semiconductor device as defined in claim 6, wherein the substrate includes the interconnect pad and the interconnect line electrically connected to the

interconnect pads in the single interconnect layer formed on the surface of the substrate.

8. The semiconductor device as defined in claim 7, wherein the interconnect lines connected to the I/O cells located on inner positions extend between the I/O cells located on the outer periphery.

9. The semiconductor device as defined in claim 6, wherein the interconnect pads and the interconnect lines electrically connected to the interconnect pads are formed as a multi-layered interconnect layer in the substrate.

10. The semiconductor device as defined in claim 9, wherein at least one of the first group and the second group includes an outer group and an inner group disposed on the inner position of the mounting member with respect to the outer group.

11. The semiconductor device as defined in claim 10, wherein the interconnect lines connected to the interconnect pads corresponding to the first I/O cells and the interconnect lines connected to the interconnect pads corresponding to the second I/O cells are formed in different interconnect layers.